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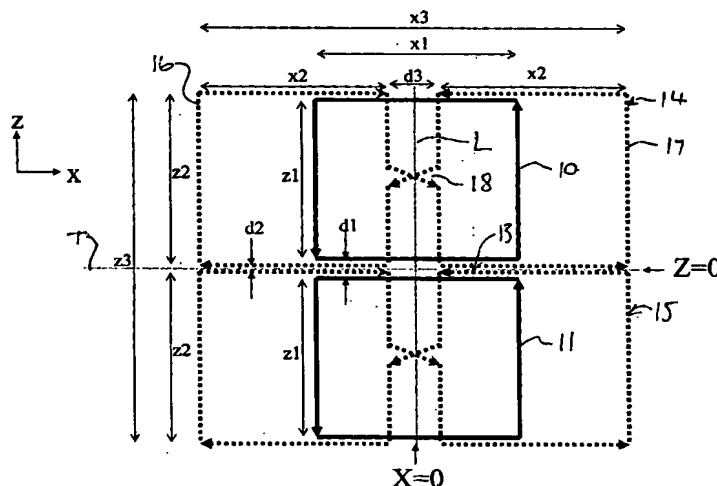
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(54) Title: STACKED COIL ARRAY FOR MAGNETIC RESONANCE EXPERIMENTS



(57) Abstract: An array coil for sensing signals in magnetic resonance experiments incorporates the traditional loop-butterfly array elements at spaced positions along an axis of the sample with additional stacked twisted loops and/or twisted butterfly elements. The twisted loop and twisted butterfly elements are centred along between the standard loop-butterfly array elements. The twisted array elements are naturally isolated from both the loop and butterfly. Alternatively, for a two dimensional mesh array of loop elements, additional twisted loop array elements are added with both longitudinal and transverse orientations, again centered between loop elements. The goal is to allow separation of loop and/or butterfly elements of linear (Spine), 2D planar arrays (Cardiac) or cylindrical arrays of curved array elements (Head), for improved parallel MRI capabilities such as the SENSE or SMASH techniques, but to recover the SNR lost in between the elements and improve the g-factor of the total array with additional orthogonal array elements.

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